Stereo Radio Recorder AW7224 /00 /05 /14

AW7324 /00 /05 /14

Service
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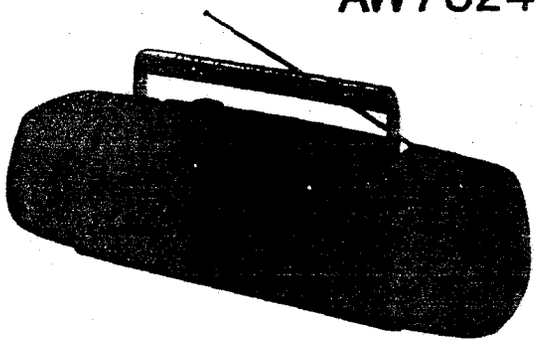

This manual superseded 4822 725 24065

Service Manual

For repair information of the cassette mechanism
see Service Manual of Tape Transport
RDR-9 for AW7324
RDN-9 for AW7224

TABLE OF CONTENTS PAGE

Connection and controls	1
Specifications	2
Cassette adjustment	3
Radio alignment	4
Schematic diagram - tuner	5
Components layout - tuner PCB	6
Schematic diagram - audio (AW7324)	7
Components layout - audio PCB (AW7324)	8
Schematic diagram - audio (AW7224)	9
Components layout - audio PCB (AW7224)	10
Exploded View diagram	11
Deck Mechanism partslist	12
Electrical partslist	13

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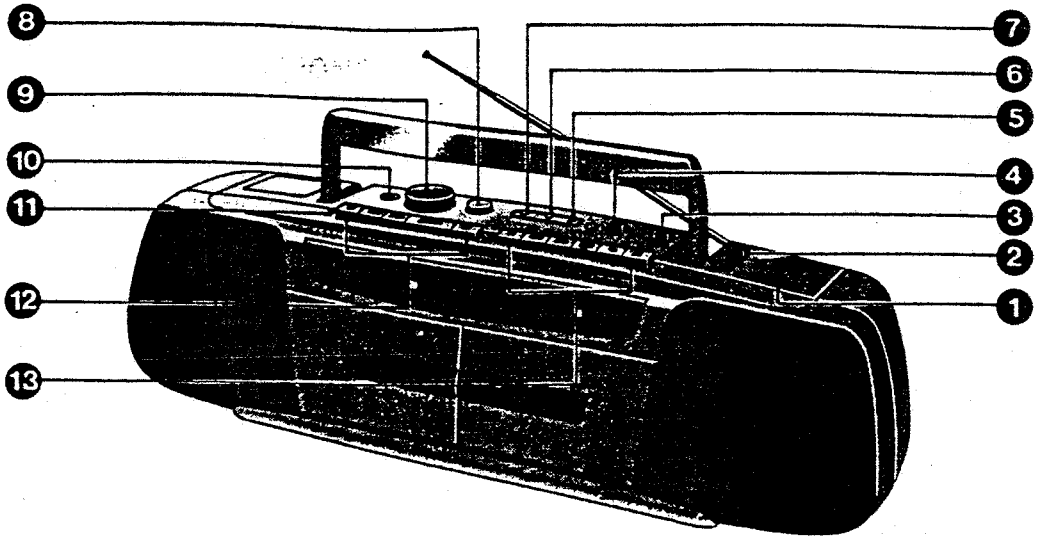
PHILIPS

PHILIPS

CONNECTION AND CONTROLS



1	Tuning knob	
2	Band selector	
3	Mode selector	
4	Bubbing switch	
5	Mic-mixing socket	
6	High speed dubbing indicator	(AW7224)
	Deck 1 direction indicator <	(AW7324)
7	Power indicator	(AW7224)
	Deck 1 direction indicator >	(AW7324)
8	DBB button	
9	Volume knob	
10	Headphone socket	
11	Deck 1 tape mode selector	(AW7324 only)
12	Deck 1 buttons	
13	Deck 2 buttons	

(GB) WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential.

ESD

(NL) WAARSCHUWING

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen. Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

(F) ATTENTION

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).
Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.
Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

(D) WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).
Unsorgfältige Behandlung im Reparaturfall kan die Lebensdauer drastisch reduzieren.
Veranlassen Sie, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand verbunden sind mit dem gleichen Potential wie die Masse des Gerätes.
Bauteile und Hilfsmittel auch auf dieses gleiche Potential halten.

(I) AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione.
Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

SPECIFICATIONS

GENERAL

Mains voltage	:	220V (for -/00 & -/14)
	:	240V (for -/05)
Mains frequency	:	50 Hz
Battery	:	9V (R20 x 6)
Power Consumption	:	20W
Dimension	:	550 x 155 x 150 (mm)
Weight	:	2.9 Kgs

AUDIO/CASSETTE

Output power	mains	:	2 x 1.4 W
	battery	:	2 x 2.2 W
Speaker impedance		:	2 x 3.2 ohm
Tape speed		:	4.76cm/s ± 2%
Wow & flutter		:	< 0.5% (weight)
Fast-wind time (C60)		:	< 130 sec.
Frequency response		:	250 - 6,300 Hz
High speed dubbing		:	250 - 5,000 Hz
S/N ratio		:	> 40dB
High speed dubbing		:	> 37dB
Bias/erase system	FM	:	AC 78 ± 10 kHz
	AM	:	DC

TUNER - FM section

Tuning range	:	87.5 - 108 MHz
	:	65 - 108 MHz (for -/14)
IF frequency	:	10.7MHz
Sensitivity	:	< 24dbf at 26dB S/N
Selectivity	:	> 20dB at 600kHz B.W.
IF rejection	:	> 50dB
Image rejection	:	> 20dB

TUNER - AM section

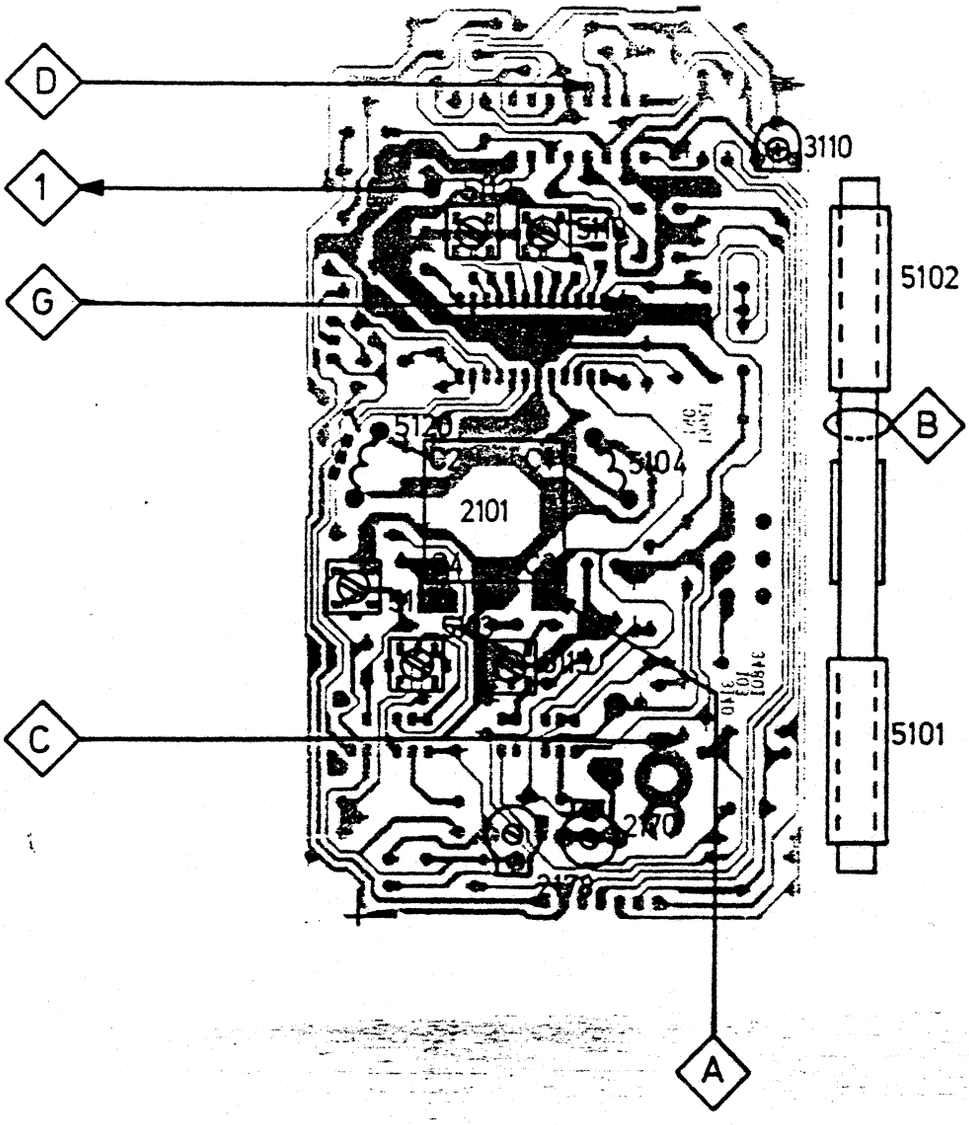
Tuning range	MW	:	520 - 1607 kHz
	LW	:	148.5 - 283.5 kHz
	SW	:	5.95 - 17.9 MHz
IF frequency		:	468 ± 3 kHz
Sensitivity	MW	:	< 3500 μV/m 26dB S/N
	LW	:	< 6000 μV/m
	SW	:	< 210 / 85 μV
Selectivity	MW	:	> 16dB
	LW	:	> 20dB
	SW	:	> 16dB
IF rejection	MW	:	> 24dB
	LW	:	> 26dB
	SW	:	> 40dB
Image rejection	MW	:	> 28dB
	LW	:	> 30dB
	SW	:	> 10 / 6 dB

:TTE ADJUSTMENT

justment	Cassette	Recorder position		Measure on	Read on	Adjust with	Adjust to
		SK...	Deck				
/P Head zimuth	8 KHz of SBC420 *	TAPE AUTO REVERSE	PLAY FORWARD	1253	mV meter	R. screw of R/P head	Maximum L = R
			PLAY REVERSE	1253	mV meter	L. screw of R/P head	Maximum L = R
:/P Head ızimuth	8 kHz of SBC420*	TAPE	PLAY	1253	mV meter	L. screw of R/P head	Maximum L = R
Motor speed	3150Hz of SBC420 *	TAPE	PLAY	1253	Wow and flutter meter	Preset in motor	3150 Hz +3/-2%

* SBC420 : 4822 397 30071

* The Wow & Flutter value can be read. This value should not exceed 0.3%.



RADIO ALIGNMENT

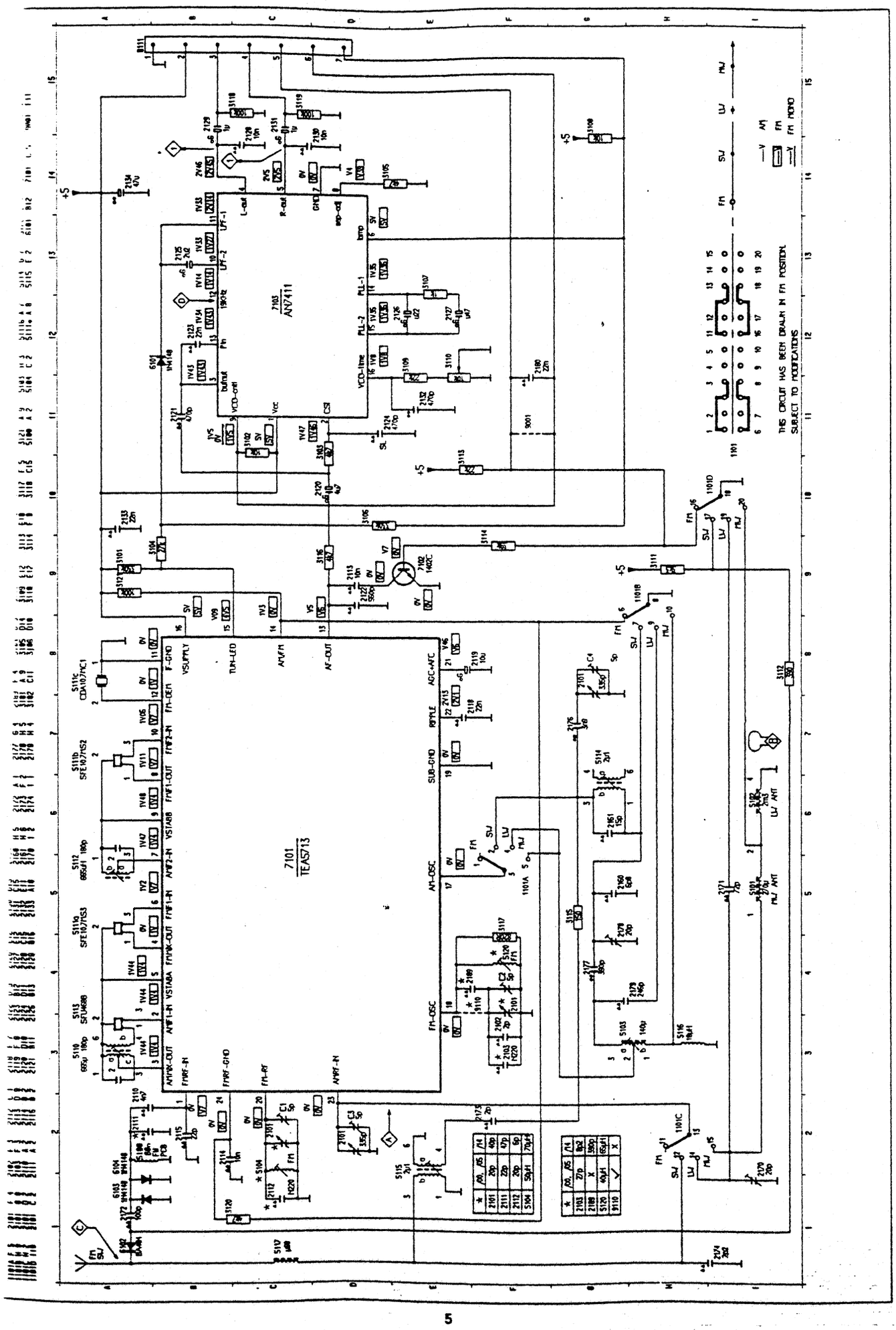
SK....	FREQUENCY	I/P	VARICON	ADJUST	O/P	SCOPE/METER
AM IF						
MW #	468 KHz	A	Min.	5110 5112	1	↕ Max.
AM RF						
MW (520 - 1606 kHz)	1635 KHz > 507 KHz	B	Min. Max.	2178	1	↕ Max.
	550 KHz 1500 KHz		550 KHz 1500 KHz	5101 2170		↕ Max.
LW (148.5 - 283.5 kHz)	147 KHz > 283.5 KHz	B	Max. Min.	5103	1	↕ Max.
	155 KHz		155 KHz	5102		↕ Max.
SW # (5.95 - 17.9 MHz)	5.82 MHz 18.2 MHz	C	Max. Min.	5114 C4	1	↕ Max.
	6.2 MHz 17.0 MHz		6.2 MHz 17.0 MHz	5115 C3		↕ Max.
FM IF						
FM	10.7 MHz		Min.		1	↕ Symmetrical
FM RF						
FM #	* 87.35 MHz * 108.25 MHz	C	Max. Min.	5120 C2	1	↕ Max.
	Φ 88 MHz 106 MHz		Φ 88 MHz 106 MHz	5104 C1		↕ Max.
STEREO DECODER						
FM STEREO	98 MHz	C	98 MHz	3110	D	19 ± 0.1 KHz

via 10nF + 15E

* For /05 : 87.0 ± 0.5 MHz - 108.5 ± 0.5 MHz
For /14 : 64.7 ± 0.3 MHz - 108.5 ± 0.5 MHz

Φ For /14 : L.T.P. = 68 MHz

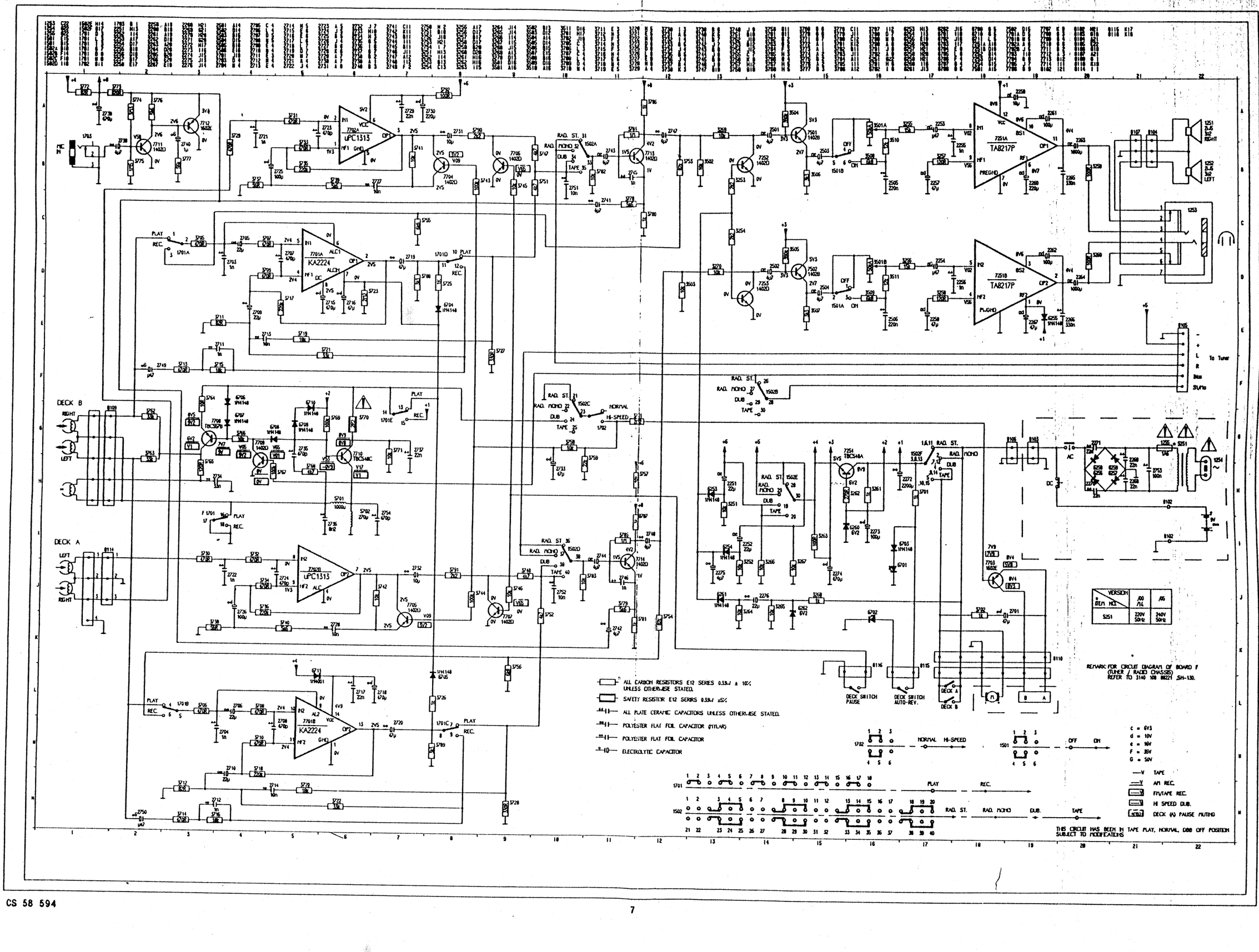
IEMATIC DIAGRAM - TUNER



COMPONENTS LAYOUT - TUNER PCB

| | | |

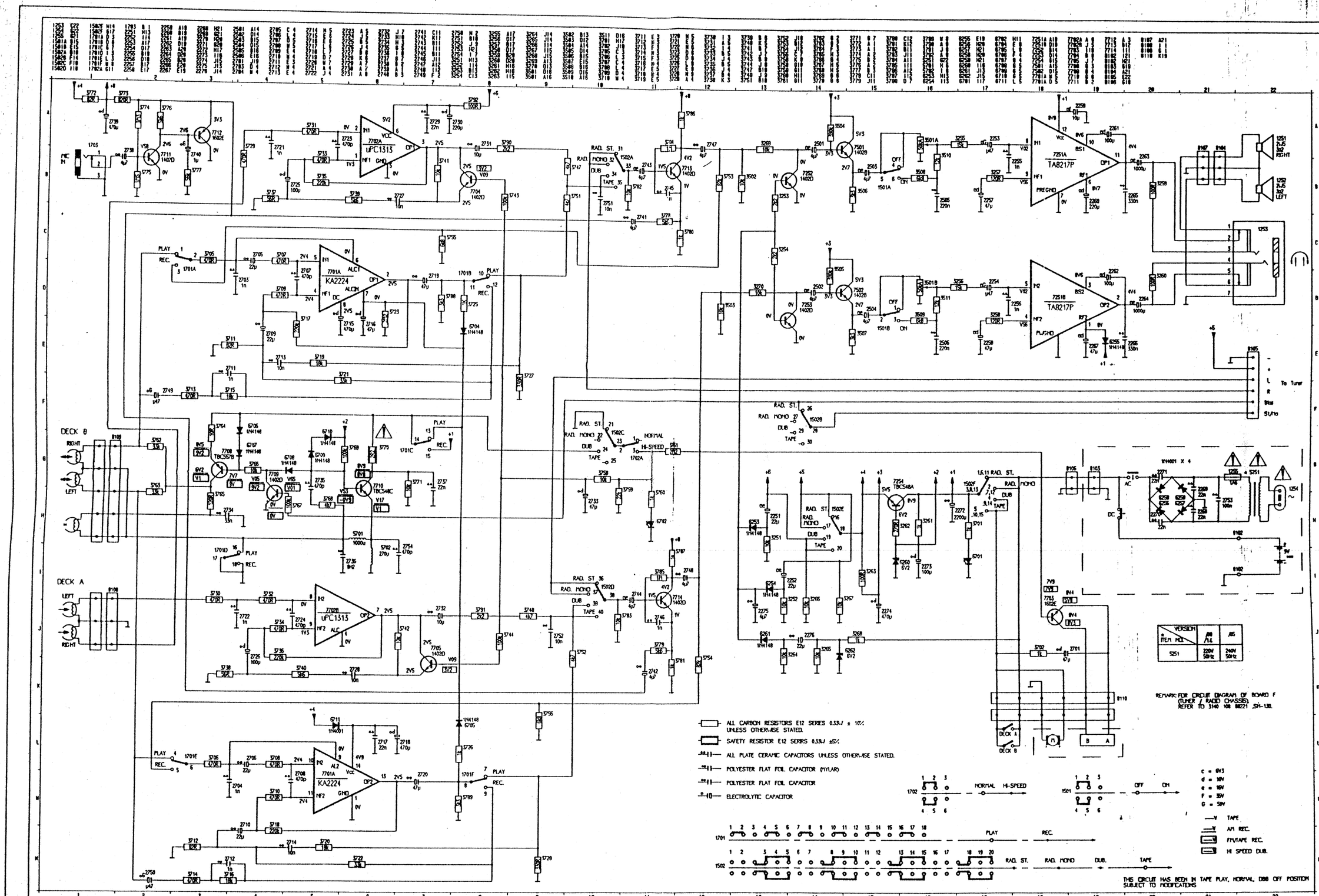
SCHEMATIC DIAGRAM - AUDIO (AW7324)



COMPONENTS LAYOUT - AUDIO PCB (AW7324)

| | | |

SCHEMATIC DIAGRAM - AUDIO (AW7224)

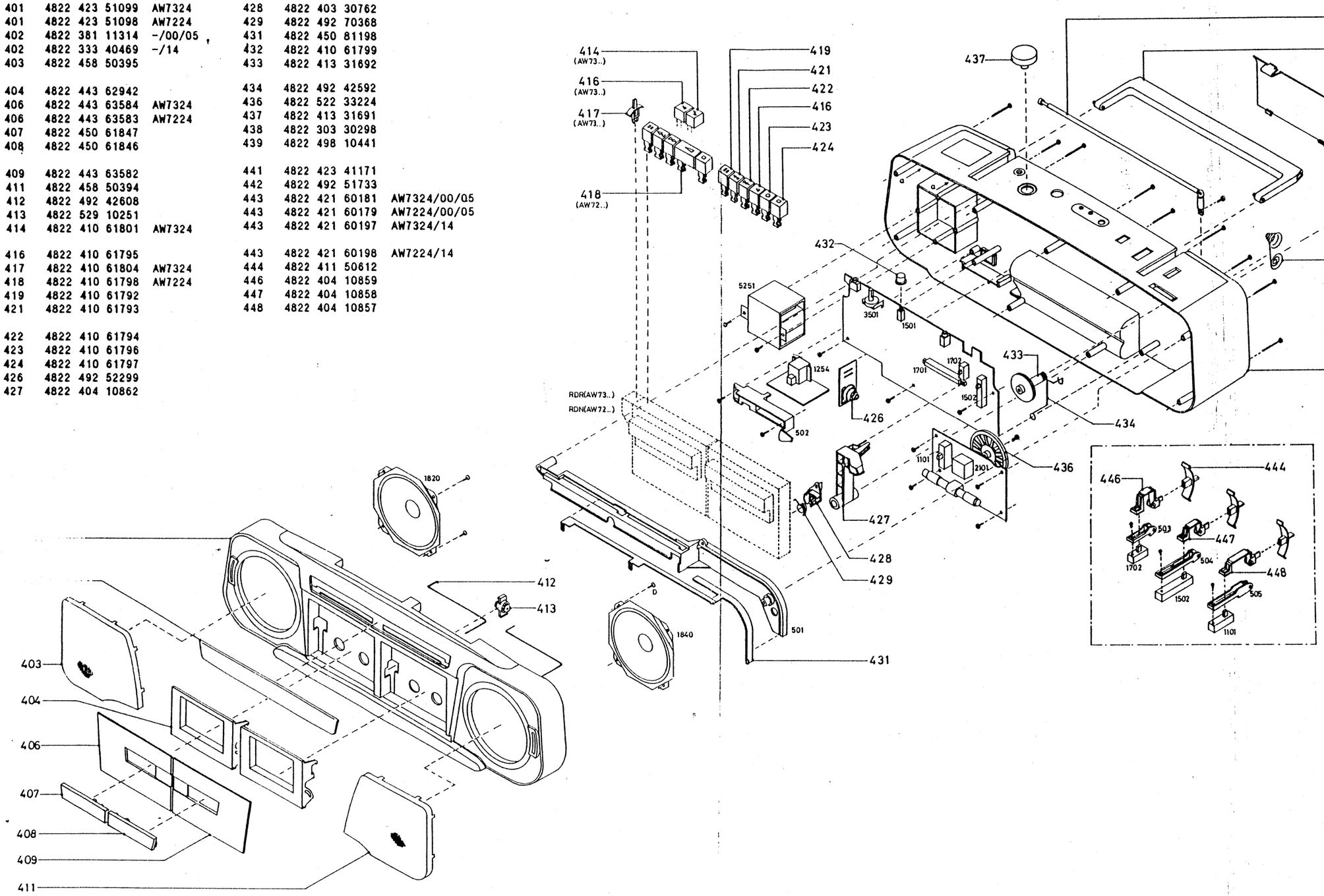


COMPONENTS LAYOUT - AUDIO PCB (AW7224)

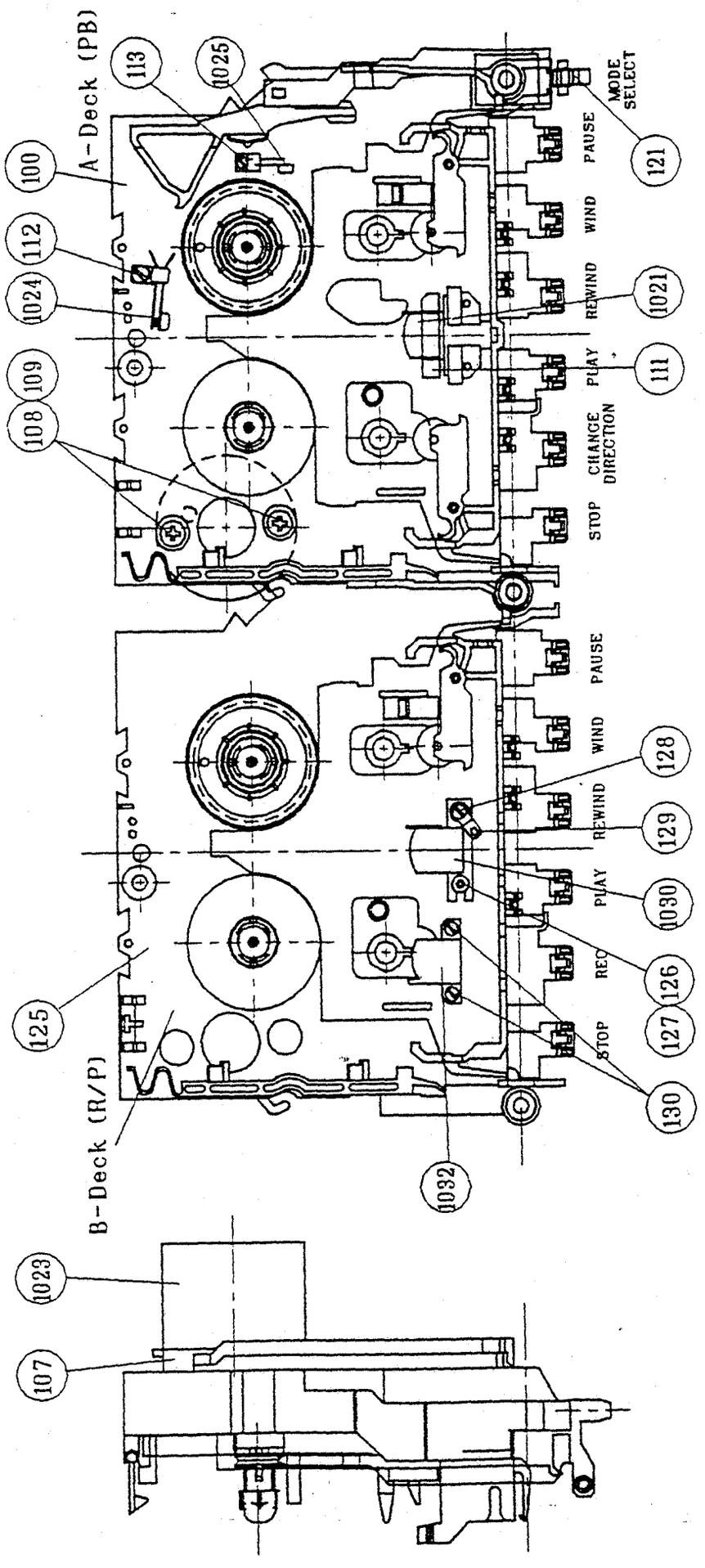
| | | |

EXPLODED VIEW DIAGRAM

401	4822 423 51099	AW7324	
401	4822 423 51098	AW7224	
402	4822 381 11314	-/00/05	
402	4822 333 40469	-/14	
403	4822 458 50395		
404	4822 443 62942		
406	4822 443 63584	AW7324	
406	4822 443 63583	AW7224	
407	4822 450 61847		
408	4822 450 61846		
409	4822 443 63582		
411	4822 458 50394		
412	4822 492 42608		
413	4822 529 10251		
414	4822 410 61801	AW7324	
416	4822 410 61795		
417	4822 410 61804	AW7324	
418	4822 410 61798	AW7224	
419	4822 410 61792		
421	4822 410 61793		
422	4822 410 61794		
423	4822 410 61796		
424	4822 410 61797		
426	4822 492 52299		
427	4822 404 10862		
428	4822 403 30762		
429	4822 492 70368		
431	4822 450 81198		
432	4822 410 61799		
433	4822 413 31692		
434	4822 492 42592		
436	4822 522 33224		
437	4822 413 31691		
438	4822 303 30298		
439	4822 498 10441		
441	4822 423 41171		
442	4822 492 51733		
443	4822 421 60181	AW7324/00/05	
443	4822 421 60179	AW7224/00/05	
443	4822 421 60197	AW7324/14	
443	4822 421 60198	AW7224/14	
444	4822 411 50612		
446	4822 404 10859		
447	4822 404 10858		
448	4822 404 10857		



Only those parts of which a service code is stated are normal service parts



DECK MECHANISM PARTSLIST

AW7324

100	4822 691 10294	RRO
125	4822 691 10296	RNO
1021	4822 249 30156	
1023	4822 361 21285	
1024	4822 271 30598	
1025	4822 278 90624	
1030	4822 249 10397	
1032	4822 249 20072	

AW7224

100	4822 691 10296	RNO
125	4822 691 10296	RNO
1021	4822 249 10397	
1023	4822 361 21285	
1024	4822 271 30598	
1030	4822 249 10397	
1032	4822 249 20072	

ECTRICAL PARTS LIST

IC -

101	4822 209 31065	TEA5713/N1	
103	4822 209 71321	AN7411	✓
251	4822 209 63783	TA8217P	
701	4822 209 72491	KA2224	✓
702	4822 209 70288	µPC1313HA	✓

Transistors -

102	4822 130 40937	1402D
252,7253	4822 130 40937	1402D
254	4822 130 40948	TBC548A
501,7502	4822 130 62741	1402B
703	4822 130 41457	1602E
704,7705	4822 130 40937	1402D
706,7707	4822 130 40937	1402D
708	4822 130 44568	TBC557B
709,7711	4822 130 40937	1402D
710	4822 130 44196	TBC548C
712	4822 130 41457	1602E
713,7714	4822 130 40937	1402D

Diodes -

101	4822 130 30621	1N4148
102	4822 130 32214	BA484
103,6104	4822 130 30621	1N4148
253-6255	4822 130 30621	1N4148
256-6259	4822 130 31438	1N4001
260,6262	4822 130 34167	BZX79-C6V2
261	4822 130 30621	1N4148
701,6702	4822 130 31274	TLR124 LED
704-6710	4822 130 30621	1N4148
711	4822 130 31438	1N4001
703	4822 130 30621	1N4148

Resistors -

110		4822 105 11078	Preset 10K
501		4822 101 21163	Potm-rot 50KA
770	⚠	4822 052 10228	Rst-fuse 2.2R

for AW7324 only

- Capacitor -

2101	4822 125 50597	Polyvaricon
#2101	4822 125 40052	Polyvaricon
2170	4822 125 50045	Trim cap 22pF
2178	4822 125 50045	Trim cap 22pF

- Coils -

5101	4822 158 60626	MW/LW ant assy
5103	4822 157 70034	Coil-AM osc
5104	4822 157 53789	Coil-FM RF
#5104	4822 156 21671	Coil-FM RF
5110	4822 156 11147	IFT-FM
5111	4822 242 81154	Filter 10.7MHz
5112	4822 156 11146	IFT-AM
5113	4822 242 71139	Filter 468kHz
5114	4822 156 30811	Coil-SW osc
5115	4822 156 30811	Coil-SW ant
5116	4822 157 70044	Coil 18µH
5120	4822 156 30947	Coil-FM osc
#5120	4822 157 70033	Coil-FM osc
5701	4822 157 53473	Coil 1mH
5702	4822 157 53518	Coil 270µH

- Miscelleous -

1101		4822 277 21589	Sw-slide BAND
1501		4822 276 10991	Sw-Push DBB
1502		4822 277 21588	Sw-slide Fun.
1701		4822 277 20594	Sw-slide R/P
1702		4822 277 21587	Sw-slide Dubb.
1251		4822 240 30613	Spkr. 4" 3.2Ω
1252		4822 240 30613	Spkr. 4" 3.2Ω
1703		4822 267 30332	Socket-mic
1253		4822 267 31468	Socket-phone
1254	⚠	4822 265 20287	Socket-mains
1255	⚠	4822 070 31602	Fuse T1.6A
5251	⚠	4822 146 31064	Tx-mains /00/14
5251	⚠	4822 146 31065	Tx-mains /05

for -/14 only

(GB)

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

(NL)

Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde worden toegepast.

(SF)

Laitteen käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

(D)

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Geräts darf nicht verändert werden für Reparaturen sind Original-Ersatzteile zu verwenden.

(I)

Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati pezzi di ricambiago identici a quelli specificati.

(S)

Om apparaten används på annat sätt än i denna bruksanvisning specificerats, kan användaren utsättas för osynlig laserstrålning, som överskider gränsen för laserklass 1.

(F)

Les normes de sécurité exigent que l'appareil soit remis à l'etat d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.